QEP Proposal
Creative, Innovative, Problem-Focused Learning

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Executive Summary

This proposal focuses on creative, innovative, problem-focused learning. A survey of the literature and various interviews, including with Paul Van Riper, indicates that while creative thinking cannot be taught, the conditions to empower those with these gifts can be forged. Creativity includes three traits: novelty, value, and unexpectedness.[1] Critical thinking, on the other hand, usually encompasses Bloom's taxonomy's top three levels: analysis, synthesis, and evaluation.[2] Knowing if something is creative requires subject matter expertise that either the student and/or the professor bring to the problem set. In many ways, critical thinking is easier to identify than creative thinking, yet both still require competent professional assessment. Additionally, both types of thinking prove ever more necessary as the United States seeks new and sophisticated answers to wicked national security problems. This multifaceted proposal seeks to enhance the ability of students to gain deep expertise, take risks, and produce intellectually at the higher levels of Bloom's taxonomy, whether at the tactical, operational, or strategic strata. Although all of the suggested recommendations have value and should be appraised holistically as being mutually reinforcing, the leadership may also choose to adopt some, but not all, of the following proposals:

Change Assessments from Letter Grades to High Pass/Pass/Fail to improve faculty feedback, focus feedback on student learning, mitigate grade inflation, and encourage intellectual risk-taking.

Adopt Oxford-Style Tutorials to deepen students' understanding and expertise on specific topics and expand the reach of resident faculty to CDET and EPME.

Engage Applied Problem-Solving to improve collaborative learning and integration of knowledge across the university through focused research, symposia, and publication on timely issues relevant to the Marine Corps

Include Concentrated Self-Study between semesters to allow students to synthesize their learning while promoting academic depth and creativity.

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[1] Harnad, Stevan. "Creativity: Method or Magic?" *Princeton University Journal*. Available at: harnad@ecs.soton.ac.uk http://cogsci.ecs.soton.ac.uk/~harnad/ ftp://cogsci.ecs.soton.ac.uk/pub/harnad/ gopher://gopher.princeton.edu/11/.libraries/.pujournals

[2] Ennis, Robert H. "Critical Thinking Assessment." *Theory Into Practice.* Special Issue: Teaching for Higher Order Thinking. Vol. 32, Issue 3, 1993: 179-186.

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Problem Statement: For over a decade, all of the service posture statements and leadership have declared that future military leaders must prepare for an uncertain, complex environment in which wicked problems reign and unintended consequences dominate decision matrices. Marine Corps University (MCU) schools and colleges stress teaching not *what* to think, but *how* to think. However much this axiom is stressed in mission statements, professional military education (PME) has a long way to go in terms of truly teaching critical thinking and providing the conditions in which creative thinking can thrive. Often, soldiers, sailors, airmen, Marines, and Coastguardsmen bring their negative risk tolerance from the field into the classroom, which is a recipe not for critical and creative thinking, but lowest common denominator espousal of concepts and facts. This risk aversion is compounded by the fact that, like in the field, many students focus on the *product* of their education (e.g., degree completion, distinguished graduate, block checking of assignment completion) versus the educational *process*.

Such observations may seem extreme, but are confirmed through MCU-wide student evaluations, where improvement of critical thinking scores remarkably low; faculty observations; and from the lack of truly revolutionary thinking akin to the "three-block war" concept that originated in Breckenridge Hall some two decades ago. Preparing tomorrow's leaders for future challenges and opportunities requires providing an environment whereby creative freedom goes hand-in-hand with accountability.

Proposal: This proposal focuses on creative, innovative, problem-focused learning. A survey of the literature and various interviews, including with Paul Van Riper, indicates that while creative thinking cannot be taught, the conditions to empower those with these gifts can be forged. Creativity includes three traits: novelty, value, and unexpectedness.[3] Critical thinking, on the other hand, usually encompasses Bloom's taxonomy's top three levels: analysis, synthesis, and evaluation.[4] Knowing if something is creative requires subject matter expertise that either the student and/or the professor bring to the problem set. In many ways, critical thinking is easier to identify than creative thinking, yet both still require competent professional assessment. Additionally, both types of thinking prove ever more necessary as the United States seeks new and sophisticated answers to wicked national security problems. This multifaceted proposal seeks to enhance the ability of students to gain deep expertise, take risks, and produce intellectually at the higher levels of Bloom's taxonomy, whether at the tactical, operational, or strategic strata. Although all of the suggested recommendations have value and should be appraised holistically as being mutually reinforcing, the leadership may also choose to adopt some, but not all, of the below proposals. I will spend the most time explaining and arguing for the first proposal, changing assessments, since it undoubtedly will be the most controversial.

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[3] Harnad, Stevan. "Creativity: Method or Magic?" *Princeton University Journal*. Available at: harnad@ecs.soton.ac.uk http://cogsci.ecs.soton.ac.uk/~harnad/ ftp://cogsci.ecs.soton.ac.uk/pub/harnad/ gopher://gopher.princeton.edu/11/.libraries/.pujournals

[4] Ennis, Robert H. "Critical Thinking Assessment." *Theory Into Practice.* Special Issue: Teaching for Higher Order Thinking. Vol. 32, Issue 3, 1993: 179-186.

Change Assessments from Letter Grades to High Pass/Pass/Fail

Students at MCU often deal in life or death issues. Perhaps the closest educational corollary, then, to MCU in the civilian world is medical schools. According to the Association of American Medical Colleges, 40 schools use a two-interval (pass-fail) system, 35 schools use three intervals, 32 schools use four intervals, and 26 schools use five intervals. Perhaps more tellingly, of the top ten medical schools for research in rankings by *U.S. News and World Report* 2014, all 10 employ some type of pass/fail system, including Harvard, Stanford, Johns Hopkins, and Yale.

The kneejerk reaction to switching to a two or three-tiered grading system is as follows: Standards will drop, the reputation of the institution will nose dive, students will produce work just to jump over the "pass" bar, and grades are important for students to know how they are (or are not) progressing. None of these assertions have been proven by evidence, either at the medical schools or, indeed, MCWAR.

The medical schools went to a tiered grading system for two main reasons, both of which have applicability to MCU. First, these hyper-achieving medical students spent more time learning to ace the test than to truly understand medicine. In other words, the focus was not on the educational *process*, but on the *product*. Perhaps counter-intuitively, this focus on test performance in a letter grade system meant that medical students actually did not internalize the material, but rote memorized it. Second, students worked less collaboratively to solve problems and make medical advancements since collaboration opened students up for the opportunity for their colleagues to overtake them in class ranking.

In addition to the effect on the students, faculty assess student performance differently when they work within letter versus tiered grading systems. In letter-graded systems, professors devote at least some, if not most, of their feedback to justifying why a student got a B+ versus an A- instead of offering a more-well rounded critique of the student's work (product) and the effort expended (process). Arguably, in a letter-graded system, the only thing that matters is the product. Paradoxically, dealing with two or three tiers versus seven (C+ up to A+ at the graduate level) allows for a more accurate assessment whereby the faculty can focus on improving the process and product versus justifying into which of the seven tiers any given assignment falls.

Faculty feedback is a constant source of disappointment for the students on MCU-wide evaluations. Part of this has to do with the inescapable fact that military faculty, with little or no experience teaching, are suddenly forced to evaluate graduate-level work. Making a distinction among seven tiers, and then justifying that distinction to the student, is much harder, and, more importantly, less productive than having a simpler tiered system where faculty can focus on the whole student, learning process, and educational product. Certainly, faculty can be trained to perform assessments more accurately, upon which MCU-wide faculty development and school specific faculty development focuses

every year; yet, the problem remains. One of the easiest fixes for this is to simplify the assessment measures in a way that seasoned faculty and novice graders alike can thrive.

These theories have been tested at MCWAR, where the National Security & Joint Warfare (NSJW) department grades two assignments high pass/pass/fail (an ongoing journal and an oral midterm) as well as for the Independent Research Project (IRP). In no case did students only produce the minimal amount required, and professor feedback proved more complete as no time was spent totaling up numbers from a rubric, justifying the difference between half a letter grade, or the like. Furthermore, high standards were upheld: In the case of the NSJW oral exams this year, two students failed out of thirty. Neither were grades artificially inflated: Only five students received high passes (less than 20 percent). Before the IRP changed to a three-tier system, professor averages for grades ranged from a 98 percent average to an 88 percent average – and the difference was not due to the quality of student papers but, arguably, to the differences in professors' standards. Since then, only about 20 percent of MCWAR IRPs receive a high pass. Where the three-tier system has been adopted, in other words, standards have *gone up*, as well as the quality and quantity of professor feedback.

The outcomes sought by adopting a three-tier system may be hard to measure, but just because something is hard does not mean it should not be attempted. From MCWAR's limited experience with a three-tier system, assessments on the impact to student learning should be seen and measured in at least four ways.

Much like student and faculty feedback used for other programs, that feedback can be used to evaluate the success in changing assessments. First, student feedback should show that they find the grading fairer and more transparent. The feedback should also show that the quality and quantity of faculty evaluation has increased.

Second, professor feedback should demonstrate an ability to focus on verbal and written feedback versus totaling up somewhat arbitrary letter grades (especially arbitrary when in the hands of unskilled assessors). Note that this does *not* mean the professor spends less time evaluating the student, but it changes where the professor's time is spent – more on oral and written feedback and less on numbers.

Third, grade inflation should be curbed through the new system, a trend that is infinitely measureable. Although 20 percent is the rough average MCWAR uses for high passes, that number is not set in stone – students get the grade that they earn. That said, having a rough percentage figure in mind curbs faculty appetite for artificial grade inflation.

Fourth, professors should be able to notice and track increased risk taking both in terms of the ways in which students learn (the process) as well as what they produce (the product). For example, in a question on the NSJW orals regarding if there could be a military coup in the United States, no student answered that this was possible when we had a letter grading system – the answer is too risky. Under a three-tiered system, four students argued for the bolder, harder answer (that a coup could happen anywhere). Agreed, correlation does not mean causation, and more data points are necessary, but this

information is at least suggestive that more elegant assessment measures lead to high-order thinking.

This cost neutral proposal is probably the best route MCU can take to truly become a "Yale on the Potomac." Given the change would be in line with what all top ten medical schools are doing, as well as some other PME institutions, a loss of reputation would not occur. Indeed, as suggested, shifting to a tiered assessment can enhance the rigor and quality of assessments across the university. This outlines the formal arguments regarding why and how this cost neutral operational shift benefits students, faculty, and MCU as a whole. Below expounds on the myriad ways MCU facilitates creative and problem-focused learning.

Oxford-Style Tutorials

Although MCU schools have terrific student/faculty ratios, another proposal that would allow students to dive deeply into a topic and enjoy the supervision of a professor to encourage the students to go as far as they can intellectually. MCU faculty, including academic chairs, should offer students Oxford-style tutorials based upon their academic and professional expertise. The student-faculty ratio would be capped at 3-to-1 to maximize the benefits of small group learning. The tutorials would meet every other month for approximately four hours per session. Each school could roll out a small number of test bed tutorials in 2015, with lessons learned applied to subsequent years as the number grows. This would not be a stand-alone recommendation since the tutorials should be optional and membership based on professor approval, not unlike other graduate school small tutorials. While the easiest implementation of these tutorials would be in the residence programs at Quantico, MCU faculty can utilize video-conferencing and other on-line collaborative tools to extend these tutorial offerings to CDET and EPME students.

Despite increasing the number of classes, this proposal could be resource minimal. MCWAR recently instituted an Advanced Study Program (ASP) using existing Title X professors. Some military faculty may also offer tutorials depending upon their level of expertise and teaching background. Even though the workload is increased for the professors, the topic areas are all in the professors' wheelhouse and therefore do not require inordinate amounts of preparation. Frankly, in addition to the students' wanting to dive deeply into a subject matter, what at least MCWAR has found is that professors have the same desire. Rather than sap morale, the classes enhance both the professors' and students' university experience. The only cost outlay would be to fund curriculum purchases, since the university already covers faculty cost and meeting space. MCU can also absorb the cost of using video-conferencing and on-line collaboration to include CDET and EPME through its current capabilities. If resources could be found, MCU also has a unique opportunity to tap into the DC university market and offer seminars from world-renowned professors and experts in that region from the School of Advanced International Studies (SAIS), Georgetown, and elsewhere.

Applied Problem Solving

Unsurprisingly, one or more geopolitical events occur during the school year that could be a test bed teaching ground for all MCU students, from the tactical to the strategic level. Each MCU school could analyze a real-world security problem largely within the parameters of its existing curriculum. The aim is not to convert MCU into a think tank, but rather to have the students apply academic tools and methodologies to a real-world problem during the academic year. After addressing the assigned problem at the appropriate level of focus (tactical, operational, strategic), each school would share its assessment with the broader MCU community at periodic symposiums to improve collaborative learning and integration of knowledge across the university. Through the History Division MCU could publish an annual anthology of the best papers from each school. This proposal would also be largely resource neutral save for the size of the symposium and if outside subject matter experts were invited, much like the Next War Symposium held under General Murray, and the size and number of the anthology. Even if money were not available, the entire process could be performed in house and be cost neutral.

Concentrated Self-Study Program

This approach requires each school to fence off a 2-to-3 week block of time for personal self-study and reflection mid-way through its curriculum. For most schools, this would occur right after the holiday break in early January. The school year may need to be lengthened to prevent this concentrated block from coming at the expense of personal self-study time already built into the curriculum. The concentrated self-study program encourages both academic depth and creativity. Faculty members would supervise student-created plans for this self-study period, with students producing either an oral or written product.

Although all of the above proposals by and large are cost neutral, the value to the MCU community in terms of creative, innovative, and problem-focused learning would be immense. MCU holds a unique place in PME, and can be a trailblazer in moving the PME community towards further developing the types of leaders required for the 21st century.